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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,033	06/24/2003	Jae Gyun Lee	YPL-PT014	2358

3624 7590 09/27/2004

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EXAMINER	
KERSHTEYN, IGOR	

ART UNIT	PAPER NUMBER
3745	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/603,033	LEE ET AL.	
	Examiner	Art Unit	
	Igor Kershteyn	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

The abstract of the disclosure is objected to because it exceeds the range of 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 1 is objected to because of the following informalities:

In line 10, "an axle rod" should be –a shaft rod--,

In line 11, "sliding" should be –rotating--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weyer (5,671,652) in view of Takeuchi et al. (6,474,214).

Weyer, in figures 1-4, teaches rotary actuator comprising: a tube having 14 first and second hydraulic pods 92,94 formed separated a predetermined distance from each other and through which oil enters and is exhausted, an end cap 40 coupled to the tube and having a first flange 52 fixed to a predetermined first platform, an axle rod 22 including a second flange portion 24 disposed at one side of the tube 14 and fixed to a predetermined second platform to be rotated, and a shaft rod (not numbered) disposed in the other portion of the tube and sliding coupled to the end cap 40, a piston 62 including a piston head 66 disposed between the tube 14 and the axle rod 22.

Weyer doesn't teach at least two tube through holes penetrating a side surface of the tube; a slant groove rod disposed in one portion of the tube and having at least two first slant grooves formed inclined on an outer circumferential surface and a slant groove body disposed between the tube and the slant groove rod, wherein at least two second slant grooves are formed on an outer circumferential surface of the slant groove body and at least two piston pin holes are formed at one side of the slant groove body, a first pin installed at the piston pin hole and inserted in the first slant groove; and a second pin including a pin end portion penetrating the tube through hole and inserted in the second slant groove and a pin head formed on the pin end portion to be stepped and inserted in the tube through hole.

Takeuchi et al., in figures 5 and 6, teaches a rotary actuator having at least two tube through holes (not numbered) penetrating a side surface of the tube 11; a slant

groove rod 16A disposed in one portion of the tube 11 and having at least two first slant grooves 45 formed inclined on an outer circumferential surface and a piston 15A having a slant groove body (not numbered) disposed between the tube 11 and the slant groove rod 16A, wherein at least two second slant grooves 43 are formed on an outer circumferential surface of the slant groove body to be opposite and at least two piston pin holes (not numbered) are formed at one side of the slant groove body, a first pin 46 installed at the piston pin hole and inserted in the first slant groove 45; and a second pin 44 including a pin end portion (not numbered) penetrating the tube through hole and inserted in the second slant groove 43 and a pin head (not numbered) formed on the pin end portion to be stepped and inserted in the tube through hole.

Since Weyer and Takeuchi et al. are analogous art because they are from the same field of endeavor, that is the rotary actuator art and because in column 5, lines 59-63, Weyer teaches "It should be understood that while helical splines are shown in the drawings and described herein, the principal of the invention is equally applicable to any form of linear-to-rotary motion conversion means, such as balls, rollers or disks.", it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the actuator of Weyer with the splines replaced by pins and slanted grooves as taught by Takeuchi et al. for the purpose of transmitting the linear motion into the rotation.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of four patents.

Taylor (3,165,982) is cited to show a rotary actuator having a body, a piston and a rod axle, the actuator using pins for transmitting linear motion to rotation but fails to teach the axle rod having a flange.

Weyer (4,313,367) is cited to show a rotary actuator having a body, a piston and a rod axle, the piston and the body having slanted grooves running in the direction opposite one to another for transmitting linear motion to rotation but fails to teach the pins.

Milberger (4,519,263) is cited to show a rotary actuator having a body, a piston and a rod axle, the actuator using pins for transmitting linear motion to rotation but fails to teach the pins engaged to the body.

Japan Patent No. 58-30504 is cited to show a rotary actuator having a body, a piston and a rod axle, the actuator using pins for transmitting linear motion to rotation but fails to teach the pins arranged between the piston and the rod.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is (703) 308 8317. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on (703) 308 1044. The fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK
September 22, 2004

Igor Kershteyn
Patent examiner.
Art Unit 3745

EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700
9/26/04